

*Sub A12*

## ABSTRACT

A facility transport system for transporting high speed Ethernet data over digital subscriber lines. The system, referred to as 100BaseS, is capable of transmitting 100 Mbps Ethernet over existing copper infrastructure up to distances of approximately 400 meters.

- 5 The system of the present invention can achieve bit rates from 25 to 100 Mbps in increments of 25 Mbps with each 25 Mbps utilizing a copper wire pair. Each pair used provides a bidirectional 25 Mbps link with four copper wire pair connections providing 4 x 25 Mbps downstream channels and 4 x 25 Mbps upstream channels. The system utilizes framing circuitry to adapt the 100BaseT input data signal to up to four separate output signals. A DSL
- 10 Ethernet Port card couples the modem to each twisted pair used. Each DSL Ethernet Port card comprises modem transmitter and receiver circuitry for sending and receiving 100BaseS signals onto its respective twisted pair wires. The system utilizes QAM in combination with frequency division multiplexing (FDM) to separate downstream channels from upstream channels and to separate both the downstream and the upstream channels from POTS and
- 15 ISDN signals.